

The **XTP II CrossPoint 6400** modular digital matrix switcher provides high performance switching of video and audio plus extension of bidirectional control and Ethernet in a future-ready integrated solution. The 50 Gbps digital backplane easily supports the data rate requirements for 8K video formats. To streamline integration, a full selection of XTP® input and output boards offer local connectivity and extended transmission capability using a single CATx or fiber optic cable. The matrix switcher is HDCP compliant, and includes many integrator-friendly features, such as EDID Minder®, Key Minder®, and RS-232 insertion over Ethernet. Configurable for I/O sizes up to 64x64, the XTP II CrossPoint 6400 is ideal for professional AV environments that require unmatched switching speed and reliability with advanced system monitoring and control.

The XTP II CrossPoint® matrix switcher is the heart of an XTP System that supports transmission of 4K video to local and remote endpoints. The 50 Gbps digital backplane ensures full compatibility with the highest video resolutions currently in use, such as 4K/60 with 4:4:4 color sampling, while also providing a future-ready upgrade path for new formats. The modular design allows the AV system to be customized to the application, with available input and output boards providing local distribution of HDMI, DVI, analog video, and audio connections in addition to long distance transmission to and from remote XTP transmitters and receivers. Each XTP board is hot-swappable so that the matrix switcher can be serviced or reconfigured without interrupting signal routing. Unoccupied board slots can be reserved for future system expansion.

XTP Systems® designed with the XTP II CrossPoint 6400 also provide extensive audio signal routing and management features. Some of these features include integrating analog stereo audio alongside digital HDMI audio, HDMI audio embedding and de-embedding, as well as audio breakaway. In addition, it can provide extension of Ethernet plus RS-232 and IR over the same fiber optic or shielded CATx cable as used for 4K video and audio signal transmission. The use of a single cable for multiple signals streamlines device operation and control, simplifies the cabling infrastructure, and reduces the need for added network drops.

XTP CP Fiber 4K I/O matrix boards provide industry standard LC-type connectivity and are available in two formats: multimode and singlemode. MM models support OM4 multimode fiber optic cable, which is typically used within buildings or facilities with moderate-range transmission distances. SM models support singlemode cable, enabling transmission capability over extreme distances.

For XTP Systems that use a twisted pair cable infrastructure, transmissions that can include 4K video, audio, control, and Ethernet are sent up to 330 feet (100 meters) over a shielded CATx cable. Extron recommends Extron-certified XTP DTP 24 shielded twisted pair cable, shielded RJ-45 plugs, jacks, and couplers, which are engineered for optimum signal transmission. The XTP DTP 24 cable is certified to 475 MHz, and utilizes a SF/UTP design with four unshielded 24 AWG twisted pair conductors inside an overall braid and foil shield for superior performance and noise immunity.

## [System Design at the Click of a Mouse](#)

The online XTP System Builder gives convenient access for complete system design. With a few clicks of the mouse, the XTP System evolves from an empty matrix switcher frame to a complete design that includes extenders, accessories, and cabling. XTP System Builder generates an as-configured custom part number for the XTP CrossPoint and compiles all selected components into a single equipment list. The tool also features a printable bill of materials, pricing, and quote submittal. Once the order is confirmed and received, the included XTP System Configuration Software enables easy setup and configuration right out of the box.

## Easy Setup and Configuration

XTP Systems include convenient, user-friendly control software for AV system configuration, monitoring, and operation. Numerous features help to simplify system configuration and operation, including the many features common to Extron matrix switchers such as I/O memory presets and the QS-FPC™ - QuickSwitch Front Panel Controller with tri-color backlit buttons.

To enhance and simplify integration of digital and analog AV devices, the matrix switcher utilizes two Extron technologies: EDID Minder and Key Minder. EDID Minder automatically manages EDID communication between all connected input sources. This technology allows EDID from any of the displays, or pre-stored selectable EDID information, to be assigned to any input. By maintaining continuous EDID communication with all sources, EDID Minder ensures that sources power up properly and reliably send content for display. For HDMI signals with protected content, Key Minder authenticates and maintains continuous HDCP encryption between input and output devices to ensure reliable switching while enabling simultaneous distribution of a single source signal to one or more displays. If an HDCP-encrypted signal is routed to a non-compliant display, a full-screen green signal is transmitted to the destination, providing immediate visual confirmation that protected content cannot be viewed on the selected display.

With the included software, EDID communication can easily be set for all devices. The software provides a complete view of the matrix switcher and remote XTP endpoints, and facilitates control and real-time status monitoring of all XTP devices through a computer.

## System Monitoring and Control

The XTP II CrossPoint 6400 can be controlled via RS-232, Ethernet, and the USB port on the front panel. With the capability to transmit control signals over the same cable used for AV, XTP Systems provide considerable flexibility to control the entire system. Bidirectional RS-232 signals can be inserted from a control system into the Ethernet port on the matrix switcher, enabling RS-232 control of remote devices attached to XTP transmitters and receivers.

Bidirectional RS-232 and IR insertion ports are included on the XTP I/O matrix boards, transmitters, and receivers. These insertion ports allow, for example, a control system to insert IR signals into an XTP input board. The signals are then communicated to an XTP transmitter for controlling the source. Similarly, the control system can insert RS-232 signals into an XTP output board for relay to an XTP receiver to support the display device. All of this flexible system control capability is available using the same cable to send control signals alongside AV and Ethernet. The end result is a simplified wiring infrastructure that reduces costs and labor.

## Extend Ethernet to Expand Network Access and AV Device Control

An Ethernet port accompanies each XTP RJ-45 or LC-type connector on the XTP extenders and XTP I/O matrix boards, providing centralized 10/100 Ethernet communication. These ports can be used to extend Ethernet access from the matrix switcher to remote endpoints over the same cable, without the need to provide additional network drops or switches. For example, Blu-ray Disc players at a source endpoint can receive Internet access from the house LAN that is interfaced into the Ethernet ports of an XTP input board. A separate LAN for the control system can be used to control remote displays via the Ethernet ports on the XTP output boards. Ethernet provides a high-speed data link to a network or the Internet for fast and easy access to the Web or other network resources.

The Ethernet ports on the XTP input and output matrix boards can also be connected into a shared house LAN for both system control and network access. This allows control system devices to be situated at remote endpoints. The capability to extend Ethernet to remote locations provides substantial flexibility to set LAN access in accordance with user requirements and IT policy for the facility.

## Power Capabilities

Housed in a rack-mountable 20U enclosure, the XTP II CrossPoint 6400 includes hot-swappable primary and redundant power supplies to ensure continuous operation in mission-critical installations. To simplify system installation, the matrix switcher is capable of providing remote power to select XTP twisted pair devices using the same cable that transmits 4K video, audio, RS-232 and IR control, and Ethernet. The matrix switcher can supply power for up to 128 transmitters and receivers.

With hot-swappable modular components, a wide selection of XTP I/O matrix boards and extenders, as well as advanced 24/7 system monitoring and control, the XTP II CrossPoint 6400 is designed to provide continuous, trouble-free operation in the most critical applications.

## Features

- **Available in I/O sizes from 4x4 to 64x64** — System configuration is flexible to match a wide variety of small to large-sized installations, and to provide an upgrade path for a truly future-ready solution.
- **50 Gbps digital backplane supports an 8K future** — Exceeds the data-rate requirements of the highest resolution video formats, including 4K/60 with 4:4:4 chroma sampling at 16 bits per color. Ensures switching and distribution of video signals without degradation, offering the performance required to maintain signal integrity with the most demanding 4K video requirements.
- **Wide selection of local, twisted pair, and fiber optic input and output matrix boards** — Available I/O boards provide integration for a variety of signal types and formats, ensuring system customization appropriate for a wide range of applications.
- **RS-232 insertion from the Ethernet control port** — System level device control to all remote locations via the matrix switcher's Ethernet port, providing comprehensive control of endpoints and attached devices without needing additional cabling.
- **Remote power to select XTP twisted pair transmitters and receivers** — For simplified installation, an XTP CrossPoint matrix switcher can remotely power select XTP transmitters and receivers over the same CATx cable used for sending AV signals. This reduces the need to separately power XTP devices at remote locations. The matrix switcher can supply power for up to 128 transmitters and receivers.
- **Audio breakaway** — Offers the capability to separate an embedded audio signal from its corresponding video signal within the matrix switcher, allowing two-channel PCM audio and the video signal from one source to be routed to different destinations.
- **Modular, field-upgradeable and hot-swappable design** — Provides substantial flexibility, expandability, and affordability by allowing users to select the configuration required for the system. Additional input and output boards may be added at any time for quick and easy upgradeability or expansion. Hot-swappable I/O boards and power supplies allow the user to update the matrix switcher without the need to power down. This is especially useful for mission-critical applications that require continuous system operation.

- **Supported HDMI 2.0b specification features include data rates up to 18 Gbps, HDR, Deep Color up to 12-bit, 3D, and HD lossless audio formats**
- **HDCP 2.2 compliant** — Ensures display of content-protected media and interoperability with other HDCP-compliant devices.
- **User-selectable HDCP authorization** — Allows individual inputs to appear HDCP compliant or non-HDCP compliant to the connected source, which is beneficial if the source automatically encrypts all content when connected to an HDCP-compliant device. Protected material is not passed in non-HDCP mode.
- **SpeedSwitch® Technology provides exceptional switching speed for HDCP-encrypted content**
- **SD Pro processing provides deinterlacing of standard definition video** — SD Pro processing deinterlaces 480i and 576i signals for compatibility with HDMI and DVI-equipped displays, without the need for additional scalers.
- **EDID Minder® automatically manages EDID communication between connected devices** — EDID Minder ensures that all sources power up properly and reliably output content for display.
- **Key Minder® continuously verifies HDCP compliance for quick, reliable switching** — Key Minder authenticates and maintains continuous HDCP encryption between input and output devices to ensure quick and reliable switching in professional AV environments, while enabling simultaneous distribution of a single source to multiple displays.
- **Automatic color bit depth management** — The matrix switcher automatically adjusts color bit depth output based on the display EDID, preventing color compatibility conflicts between sources and display devices.
- **HDMI to DVI Interface Format Correction** — Automatically reformats HDMI source signals for output to a connected DVI display.
- **Compatible with all XTP input and output boards** — XTP Systems provide a flexible signal switching and distribution solution that is completely integrated, ensuring reliable routing of multiple digital and analog formats.
- **Ethernet extension** — Centralized 10/100 Ethernet communication can be implemented via an Ethernet pass-through port to reduce the amount of independent network drops required within a system. Ethernet provides a high-speed data link to a network or the Internet for fast and easy access to the Web or other network resources.
- **Fully digital signal routing** — Analog signals are digitized, sending a reliable, high quality digital video signal to the output destination.
- **HDMI and DVI output boards provide +5 VDC, 250 mA power on each output for powering external peripheral devices** — Power provided via a board's digital output eliminates the need of a separate power supply for the connected peripheral device.
- **Automatic cable equalization for each digital input** — Cable input equalization optimizes signal performance for all incoming signals, ensuring pristine image quality is delivered throughout XTP Systems using a twisted pair cable infrastructure.
- **Automatic output reclocking** — Reshapes and restores timing of digital video signals at each output, eliminating high frequency jitter to ensure reliable transmission over long cables.

- **HDCP authentication and signal presence confirmation via RS-232 or Ethernet** — Provides real-time verification of HDCP status for each digital video input and output. This allows for simple, quick, and easy signal and HDCP verification through RS-232/RS-422 or Ethernet, providing valuable feedback to a system operator or helpdesk support staff.
- **HDCP Visual Confirmation provides a green signal when encrypted content is sent to a non-compliant display** — A full-screen green signal is sent when HDCP-encrypted content is transmitted to a non-HDCP compliant display, providing immediate visual confirmation that protected content cannot be viewed on the display.
- **Audio input gain and attenuation** — Allows the level of gain or attenuation to be set for each analog audio input, eliminating noticeable volume differences when switching between sources.
- **Output muting control** — Provides the capability to mute one or all outputs at any time. In addition to muting audio, video, or both, the unit can also be set to mute video and sync to allow projectors or flat-panel displays to automatically enter into standby mode to save energy and enhance lamp or panel life.
- **Audio output volume adjustment** — Audio output can be set dynamically for each channel through the front panel or serial control eliminating the need for audio preamplifiers in many system designs.
- **Ethernet monitoring and control** — Engineered to meet the needs of professional AV environments, Ethernet control provides proactive monitoring and system management over a LAN, WAN, or the Internet, using standard TCP/IP protocols. Ethernet control provides for remote selection of input and output ties, adjustment and control of audio input and output levels, and advanced system diagnostics.
- **Internal color bars test pattern with or without audio for setup and calibration**
- **Hot-swappable primary and redundant power supplies** — The XTP II CrossPoint 6400 includes a redundant power supply for continuous, mission-critical applications where power reliability is crucial.
- **Tri-color, backlit buttons** — Buttons can be custom labeled for easy identification. The buttons illuminate red, green, or amber, depending on function, for ease of use in low-light environments.
- **QS-FPC™ - QuickSwitch Front Panel Controller** — Provides a discrete button for each input and output, allowing for simple, intuitive operation.
- **Global presets** — Frequently used I/O configurations may be saved and recalled either from the front panel, serial, or Ethernet control. This time-saving feature allows I/O configurations to be set up and stored in memory for future use.
- **View I/O mode** — Users can easily view which inputs and outputs are actively connected.
- **Front panel configuration port** — Enables easy configuration without having to access the matrix switcher's rear panel.
- **Front panel security lockout** — Prevents unauthorized use in non-secure environments. In lockout mode, a special button combination is required to operate the switcher from the front panel controller.
- **Optional remote control** — The optional MKP 2000 and MKP 3000 X-Y Remote Control Panels provide the flexibility to control the matrix switcher from a remote location.
- **New JITC Certified** — Successfully completed interoperability and information assurance testing for use in government applications and other mission-critical environments.

- **Rack-mountable 20U, full rack width metal enclosure**
- **Highly reliable, energy-efficient internal universal power supply** — The 200-240 VAC, 50/60 Hz, international power supply provides worldwide power compatibility with [high demonstrated reliability](#).